

**Thomas Jefferson to William Dunbar, May 25, 1805,
from Thomas Jefferson and Early Western Explorers,
Transcribed and Edited by Gerard W. Gawalt,
Manuscript Division, Library of Congress**

Thomas Jefferson to William Dunbar

Washington May 25. 1805.

Dear Sir

Your several letters with the portions of your journals forwarded at different times have been duly recieved; and I am now putting the Journals into the hands of a person properly qualified, to extract the results of your observations, and the various interesting information contained among them, and bring them into such a compass as may be communicated to the legislature, not knowing whether you might not intend to make a map yourself of the course of the river, he will defer that to the last part of his work on the possibility that we may recieve it from yourself.

Your observations on the difficulty of transporting baggage from the head of the Red river to that of the Arcansa, with the dangers from the seceding Osages residing on the last river have determined me to compose the ensuing mission to the ascent of the Red river to it's source, & to descend the same rive again, which will give an opportunity of better ascertaining that, which in truth, next to the Missouri, is the most interesting water of the Missisipi. You will accordingly recieve instructions to this effect from the Secretary at War. Dr. Hunter does not propose to take a part in this mission, and we suppose that Mr. George Davis, a deputy of Mr. Briggs will be the fittest person to take the direction of the expedition and Colo. Freeman as an assistant, & successor in case of accident

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to the principal. Still these propositions are submitted to your controul, as being better acquainted with both characters. I write to Govr. Claiborne to endeavour to get a passport from the Marquis of Casa-Calvo for our party as a protection from any Spaniards who may be fallen in with on the route: and we offer to recieve one or two person, to be named by him and subsisted by us into the party, as a proof that the expedition is merely scientific, and without any views to which Spain could take exception, the best production against the Indians will be the authority to confer with them on the subject of commerce. Such conferences should be particularly held

with the Arcansas and Panies residing on the Red river, and every thing possible be done to attach them to us affectionately. In the present state of things between Spain & us, we should spare nothing to secure the friendship of the Indians within reach of her.

While Capt. Lewis's mission was preparing, as it was understood that his reliance for his longitudes must be on the Lunar observations taken, as at sea, with the aid of a timekeeper, and I knew that a thousand accidents might happen to that in such a journey as this, & thus deprive us of the principal object of the expedition, to wit, the ascertaining the geography of that river, I sat myself to consider whether in making observations at land, that furnishes no resource which may dispense with the time keeper, so necessary at sea. It occured to me that as we can always have a meridian at land, that would furnish what the want of it at sea obliges us to supply by the timekeeper. Supposing Capt. Lewis then furnished with a meridian, & having the requisite tables & Nautical Almanac with him, 1. he might find the right ascension of the moon when on the meridian of Greenwich on any given day. Then find by observation when the moon should attain that right ascension (by the aid of a know star) & measure her distance in that moment from his meridian. This distance would be the diference of longitude between Greenwich & the place of observation. Or 2dly. Observe the moon's passage over his meridian & her right ascension at that moment. See by the tables the time at Greenwich when she was on his meridian. Or 3dly. observe the moon's distance from his meridian at any moment, & her right ascension at that moment, & find from the tables her distance from the meridian

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of Greenwich when she had that right ascension, which will give the distance of the two meridians. This last process will be simplified by taking for the moment of observation that of an appulse of the moon and a known star, or when the moon & a known star are in the same vertical.

I suggested this to Mr. Briggs, who considered it as correct & practicable and proposed communicating it to the Phil. society; but I observed that it was too obvious not to have been thought of before, and suppose had not been adopted in practice because of no use at sea where a meridian cannot be had, and where alone the nations of Europe had occasion for it. Before his confirmation of the idea however, Capt. Lewis was gone. In conversation afterwards with Baron Humboldt, he observed that the idea was correct, but not new & that I would find it in the 3d vol. of Delalande. I recieved two days ago the 3d & 4th vols. of Montucla's his of Mathematics, finished & edited by Delalande; and find in fact that Morin & Vanlangren in the 17th century proposed observations of the moon on the meridian, but it does not appear whether they meant to dispense with the timekeeper: but a meridian at sea being too impracticable, their idea was not pursued. The purpose of troubling you with these details is to submit to your consideration and decision whether any use can be made of them advantageously in our future expeditions, & particularly that up the Red river.

Your letter on the current of the Missisipi, and paper on the same subject, corrected at once my doubts on your theory of the current of that river. Constant employment in a very different line, permits me to turn to philosophical subjects only when some circumstances forces them on my attention. No occurrence had called my mind to this subject particularly since I had first been initiated into the original Torricellian doctrine of the velocities at different depths being in the sub-duplicate ratio of the depths, and tho' Buata had given me his book while at Paris, your letter was the first occasion of my turning to it, and getting my mind set to rights to a certain degree. There is a subsequent work by Bernard which is said to have furnished corrections and additions to Buata; but I have never seen it.

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The work we are now doing is I trust done for posterity, in such a way that they need not repeat it. For this we are much indebted to you not only for the labour & time you have devoted to it, but for the excellent method of which you have set the example, and which I hope will be the model to be followed by others. We shall delineate with correctness the great arteries of this great country: those who come after us will extend the ramifications as they become acquainted with them, and fill up the canvas we begin. With my acknowledgements for your zealous aid in this business, accept by friendly salutations & assurances of great esteem & respect. Th: Jefferson

FC in the hand of Thomas Jefferson. Thomas Jefferson Papers, Library of Congress.